

REMARKS/ARGUMENTS

2. Claims 11, 14 and 17 are rejected under 35 U.S.C. § 103a as being unpatentable over Lease et al., U.S. 5,984,105

2.1 Applicant respectfully points out that Lease discloses a "vibratory conveyor" 12 and a "screen section" 42; at no point in the specification or claims does Lease use the phrase "vibrating screen" or even suggest a vibrating screen. For instance in [105], §4 L42: *"As shown in FIG. 2, the **vibratory conveyor 12** may also include a **screen section 42** upstream of the material separation section 16 having a mesh size to permit the heavier material in the form of shot as well as the lighter fines to pass from a first level 12a of the vibratory conveyor 12 through the screen section 42 to a second, lower level 12b while retaining any overs material larger than the heavier material at the first level 12a."* Lease is quite precise in his claim language as well; no independent claim contains the word "screen" and the two dependent claims are clear the "screen section" is part of the vibratory conveyor.

This may seem a trivial point to the Examiner, however it speaks to the issue; one knowledgeable in the art understands that a vibratory conveyor and a vibrating screen are not the same apparatus; a vibratory conveyor is considerably larger, more expensive and requires much more operating power and maintenance, therefore operating expense, as compared to a vibrating screen. The vibrating screen of the instant invention *"helps separate the compressed material"*, [0013], next to last sentence of the published application, US 2005/0061716.

There is no similar function in the Lease apparatus because Lease is not dealing with "sub-four inch news screen fines"; "sub-four inch news screen fines" did not exist at the time of the Lease invention.

2.2 Examiner states: "The reference discloses "... and second vibrating screen (22)...". There is no "second vibrating screen (22)" in the reference! Please see §3 L46 of [105] : *"... the material separation section 16 of the vibratory conveyor 12 comprises a fluidizing deck 22 for supporting the heavier material and the fines while accommodating passage of air upwardly from the plenum chamber 20 through the heavier material."* Lease clearly distinguishes his "screen section" from his fluidizing bed section. Please note that Lease is blowing air up through the fluidizing deck 22 which is part of the material separation section 16 of the vibratory conveyor 12.

2.3 Examiner states that Lease discloses an "adjustable pneumatic separator" in Fig. 6. Lease discloses a "cyclone separator" 60; §5 L12 *"The fines removing means includes a cyclone separator 60 for removing fines and dust or other refuse...."*. Also note §5 L64: *"As a result, the fluidizing air causes the fines and dust to be blown upwardly out of the shot where it passes through the exhaust hood 48, the air duct 50, and into the cyclone separator 60."*

This apparatus is not similar to the instant invention's "adjustable pneumatic separator" which is clearly distinguished from the instant invention's "cyclone (642) for processing the light portion". A clear distinction of the instant invention is the fact that a specific portion of generic garbage, namely, "sub-four inch news screen fines", is being processed to recover and recycle a large part of the incoming material. Even though the instant invention has several components in common with Lease the components are functioning in a manner not disclosed or suggested by Lease. The cyclone is a clear example. The instant invention does not pneumatically "process" fines or dust. Please note classification step 113 and 114 of Figure 1; [0014] L3 *".. an unusually small screen is used; 0.25 inch is preferred."* "fines and dust" are

removed from the material being processed before any air separation means are employed. Please note [0015] of the published application: *[0015] By removing material smaller than one quarter inch first, pneumatic separation of the larger dimensioned material is facilitated.* In operation the Lease invention has a dust generation problem because of the means and sequence the apparatus employs for separation; applicant's invention does not. Applicant is prepared to supply photographs of the two machines in operation to demonstrate this fact.

2.4 When evaluating a claim for determining obviousness, all limitations of the claim must be evaluated (except in the factual contexts of *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990) and *In re Wright*, 848 F.2d 1216, 6 USPQ2d 1959 (Fed. Cir. 1988) which was overruled *en banc* by the Federal circuit in *Dillon*). Lease fails to claim, disclose, teach, or suggest the limitations of claims 11, 14 and 17. In addition to the previous stated differences the sequence of operations required by the claims is clearly absent from Lease.

3.0 Lease et al. fails to disclose any dimensions associated with his apparatus; screen size is only one omission. If one knowledgeable would think it obvious to choose certain screen sizes why did Lease choose not to have a screen size appropriate for screening out dust from his "shot" material so that he would not have to use a cyclone to separate it?

3.1 A key feature of the instant invention is that the pneumatic separator is the same size as the screen and is positioned at the end of the screen. Note [0015], L6: *"Upon reaching the end of the screen, the material, across the complete length (width) of the screen, falls into an air chamber, a pneumatic separator."* Positioning the air separation after the screening

separation is another key distinction to Lease; Lease is fluidizing the material while it is being screened; this may seem trivial to the examiner; however the instant invention has clear operating benefits over Lease and this is one of the features which contributes to the overall advantage.

4.0 Applicant requests Examiner to point out where in the reference the words "News screen fines compressed material" appear; we have been unable to locate it. Please note §1 L50 *"In order to achieve the reclamation of the shot as a reusable material in a timely manner, it is necessary to separate and remove the fines as a waste product in a high volume operation."* and §1 L64 *"Additionally, it is an object of the present invention to provide an apparatus for separating fines from shot by utilizing a fluidizing deck as a portion of a vibratory conveyor."*

4.1 Neither "first size" nor "second size" appear as phrases in the reference.

4.2 "sub four inch news screen fines compressed material" is a claim limitation of all three independent claims which fails to be taught or suggested by Lease.

5.0 Based on reading and a Word check of the reference the applicant has been unable to find the following words or phrases in the reference.

- a) compressed
- b) vibrating screen
- c) news
- d) rotary
- e) airlock
- f) drop box

Applicant respectfully requests clarification on exactly what and where the reference "further discloses". Please note that these words and phrases are in fact claim limitations that are neither taught or suggested by Lease.

6.0 Applicant agrees with Examiner that in general it is obvious to separate items based on size. However, one novel distinction of the instant invention to the referenced invention and all prior art is that the fact that the instant invention is separating "sub-four inch news screen fines" and it separating this new material into at least six separate portions at least five of which have economic value. Please note in Figure 1:

- a) step 104 returns Fraction 2 to the original stream for further processing.
- b) step 113 separates out Fraction 4 as waste or possibly resalable glass if above 50%.
- c) step 131 separates Fraction 5 and Fraction 3
- d) step 132 separates Fraction 5 into two streams, each of which may have economic value.
- e) step 133 separates Fraction 3 into two streams, each of which may have economic value.

Physical size is the discriminator when processing by screens; weight and density and magnetic property are discriminators after the screen classifications. As mentioned in the specification and the claims, the sequence of the various classifications and separation steps is an important feature of the invented apparatus which also distinguishes it from the prior art.

In addition, no prior art, including Lease, teaches:

a pneumatic separator comprising a first air stream flowing up from below and a second air stream being exhausted from above which classifies the third portion into a heavy portion and a light portion wherein the relative quantities of the first and second air streams are adjustable;

as stated in applicant's independent claims.

8.0 Claims 11,13,14,16,17 and 19 are rejected under 35 U.S.C. §112, second paragraph as being indefinite for lack of frame of reference for "flowing up from below" and "exhausted from above". Applicant states that "up", "below" and "above" have their conventional meanings.

8.1 Please see [0022] *"FIG. 5 is a top view, figuratively, of the second classification occurring on a second vibrating screen system (512) as in step 112. Step (131), occurring at point (531), is a point of novelty in using an adjustable positive pressure air separation means from below and an adjustable "negative" pressure air from above to separate a light portion (530) from a heavy portion (533)."* "below" and "above" are referenced to step (131) and point (531) which is the end of the screen where material remaining after classification by the screen is ejected into a pneumatic separator which has air blowing up, from below the material and also a blower positioned above the material is rotating such that it is "pulling" (negative) the material up and toward the higher placed blower; both blowers being adjustable. One knowledgeable in the art would understand the limitation after reading the specification and studying the figures.

8.2 Applicant respectfully points out that this language has been in place from the original submission without comment from the Examiner.

10. Applicant respectfully points out several distinctive and novel features of the instant invention as compared to Lease [105] and prior art.

10.1 a) The instant invention employs two sets of vibratory screens to first separate the news

finer material; then the resulting material is introduced to an air stream in an air chamber equal to the length of the shaker screen. This process starts by a first shaker screen (104) removing "overs"; a second shaker screen (113) removes dust & small glass; after several air separation steps (130, 132), the process uses a cross belt magnet (133) to remove any other ferrous material. This process removes more than multiple co-mingled streams.

b) The instant invention segregates dust (1) and fines, in this application marketable glass (2), (3) "overs" (material that is not properly sized to be included in the final marketable product), two light materials, paper (4) and Styrofoam (5), metal, in this application marketable ferrous metal (6), non-ferrous material (7).

10.2 The second screen of the instant invention screen removes dust and fines. This innovative in that it eliminates a need for a dust collector or bag house and simplifies the process reducing overall system cost. The use of a vibrating screen before introducing air allows the light material to separate from the heavy material via a mechanical shake then, given the air chamber is the full length of the screen, the classified material drops already separated into an air chamber. This allows for an easy separation of the lights; positive air applied upward through the air chamber insures lights travel upward to the drop box/rotary airlock and cyclone/rotary airlock configuration for separation into two more products such as Styrofoam and paper.

10.3 The instant invention system is also unique in the configuration where we first remove overs via a shaker screen and then taking out dust and fines. This insures a uniform material size for the air chamber again improving consistency of removal.

10.4 The instant invention differs from Lease [105] in multiple ways; some of which are:

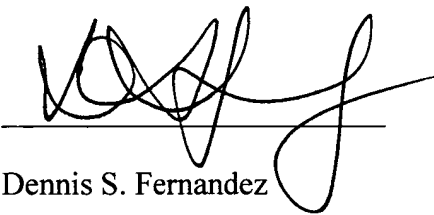
- a) The referenced patent [105] introduces air directly on the screen and in many applications at a 90 degree angle to the material flow.
- b) The referenced patent [105] uses a vibratory conveyor to separate the material whereas the instant invention uses a vibrating screen. Vibratory conveyors are larger, have more moving parts thus require more maintenance and consume more power.
- c) The referenced patent [105] needs a dust collector to work properly given it does not eliminate dust in the process.
- d) The referenced patent [105] does not introduce air on the subject material after a shaker screen separation but rather during this separation process on top of a vibrating conveyor; this is a key difference which limits severely the referenced patent's [105] applicability to separate streams of multiple waste types.
- e) The referenced patent [105] can not accomplish separation of a multi-component waste stream into multiple products almost all of which have economic value. Nor does any logical extension of the referenced patent [105] have the aforementioned capability.

11.0 Applicant respectfully points out that the "problem" of separating "sub-four inch news screen fines" into at least six separate portions at least five of which have economic value could not have been solved by the Lease invention because it did not exist at the time Lease et al. made the invention. The problem was created when the cost of trash separation by the home and multiple collection means for keeping it separate became too expensive and many municipalities reverted to single stream, heterogeneous waste processing. The value of recycled paper, glass, metals and other items made it economic for the waste processor to separate the waste stream and recover items with economic value. Lease was solving a

distinct problem of shot recovery. Recently one machine from the [105] assignee, General Kinematics Corp., began operating in California. Applicant has delivered seven machines and has one more on order. Applicant cites demonstration of clear economic success as another determining factor in the distinctive differences of the two inventions. Clearly, the Lease apparatus does not solve the sub-four inch news screen problem to customers satisfaction.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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